CLAIMS

What Is Claimed is:

1. An expression vector comprising a vector to transform a mammary gland cell or tissue to contain a hirudin gene with a promoter specifically expressing nucleic acid encoding hirudin.

2. The expression vector of Claim 1, wherein said promoter is selected from the group consisting of casein gene, whey acid protein gene, lactoalbumin gene and lactoglobulin gene.

3. The expression vector of Claim 1, wherein said promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

4. The expression vector of Claim 2, wherein said promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

5. The expression vector of Claim 1, wherein said mammary gland cell or tissue is from human, pig, cattle, horse, goat, camel, sheep or rodent.

6. The expression vector of Claim 1, wherein said promoter is α-lactoalbumin gene.

7. The expression vector of Claim 6, wherein said α-lactoalbumin promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

8. A transformed mammary gland cell comprising a mammary gland cell transformed to contain a nucleic acid encoding hirudin with a promoter specifically expressing said nucleic acid encoding hirudin.

9. The transformed mammary gland cell of Claim 8, wherein said promoter is selected from the group consisting of casein gene, whey acid protein gene, lactoalbumin gene and lactoglobulin gene.

10. The transformed mammary gland cell of Claim 8, wherein said promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

11. The transformed mammary gland cell of Claim 9, wherein said promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

12. The transformed mammary gland cell of Claim 8, wherein said mammary gland cell is from human, pig, cattle, horse, goat, camel, sheep or rodent.

13. A transgenic non-human mammal whose genome comprises a DNA sequence encoding for hirudin in conjunction with a promoter expressing said hirudin in a mammary gland cell or tissue.

14. The transgenic non-human mammal of Claim 13, wherein said promoter is selected

from the group consisting of casein gene, whey acid protein gene, lactoalbumin gene and lactoglobulin gene.

15. The transgenic non-human mammal of Claim 13, wherein said promoter is isolated from pig, cattle, horse, goat, camel, sheep or rodent.

16. The transgenic non-human mammal of Claim 14, wherein said promoter is isolated from pig, cattle, horse, goat, camel, sheep or rodent.

17. The transgenic non-human mammal of Claim 13, wherein said mammal consisting of pig, cattle, horse, goat, camel, sheep and rodent.

18. The transgenic non-human mammal of Claim 13, wherein said promoter is α-lactoalbumin gene.

19. The transgenic non-human mammal of Claim 18, wherein said α-lactoalbumin promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

20. An mammalian cell isolated from said transgenic non-human transgenic mammal of Claim 13, comprising a genome which comprises a DNA construct comprising in operable association promoter specifically expressing gene in a mammary gland cell or tissue and a nucleic acid encoding hirudin.

21. The isolated mammalian cell of Claim 20, wherein said promoter is selected from the group consisting of casein gene, whey acid protein gene, lactoalbumin gene and lactoglobulin gene.

22. The isolated mammalian cell of Claim 20, wherein said promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

23. The isolated mammalian cell of Claim 21, wherein said promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

24. The isolated mammalian cell of Claim 20, wherein said mammalian cell is from pig, cattle, horse, goat, camel, sheep and rodent.

25. The mammalian cell of Claim 20, wherein said cell is a mammary gland cell.

26. The mammalian cell of Claim 21, wherein said cell is a mammary gland cell.

27. The isolated mammalian cell of Claim 20, wherein said promoter is α-lactoalbumin gene.

28. The isolated mammalian cell of Claim 27, wherein said α-lactoalbumin promoter is isolated from human, pig, cattle, horse, goat, camel, sheep or rodent.

29. The isolated mammalian cell of Claim 27, wherein said cell is mammary gland cell.

30. A polynucleotide for amplifying the gene of the hirudin, which is selected from the group consisting of SEQ ID Nos. 1, 2, 3 and 4.

31. A primer for amplifying the gene of the hirudin, which is selected from the group consisting of SEQ ID Nos. 5, 6, 7 and 8.

32. A method of producing hirudin, comprising the steps of: culturing transformed mammary cells with the expression vector of Claim 1, and recovering the hirudin expressed by said transformed mammary cells.